REMARKS/ARGUMENTS

Claims 1-18 are pending in the application; the status of the claims is as follows:

Claims 1, 2, 4-8, and 10-12 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,437,481 B2 to Senda et al ("Senda").

Claims 3 and 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Senda in view of U.S. Patent No. 5,841,215 to Takeishi ("Takeishi").

Claims 3 and 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Senda in view of U.S. Patent No. 6,512,321 B2 to Yoshida et al ("Yoshida").

Claims 13-18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the references as applied above under 35 U.S.C. § 103(a), and further in view of U.S. Patent No. 5,870,634 to Sugaya et al ("Sugaya").

The acknowledgement, in the Office Action, of a claim for foreign priority under 35 U.S.C. § 119(a)-(d), and that the certified copy of the priority document has been received, is noted with appreciation.

The indication, in the Office Action, that the Examiner has no objections to the drawings filed on July 11, 2003, is noted with appreciation.

Claims 1-18 have been cancelled and new claims 19-43 have been added. These changes are not necessitated by the prior art, are unrelated to the patentability of the invention over the prior art, and do not introduce any new matter.

35 U.S.C. §§ 102(e) and 103 Rejections

Claims 1-18 were rejected under 35 U.S.C. § 102(e) as being anticipated by Senda, or were rejected under 35 U.S.C. § 103(a) as being obvious over Senda in view of

Takeishi, Yoshida or Sugaya. Applicants respectfully submit that new claims 19-43 are patentably distinct from these references for the following reasons:

Senda shows a drive mechanism using resonant piezoelectric motor 107. The frequency response of the motor varies with temperature (Figure 2). Senda measures the motor temperature, determines a maximum rotational speed and adjusts the output frequency of the driving signal to achieve the maximum speed (Figure 5). Of importance, Senda does not show or suggest setting the speed of the motor at any other speed than a maximum target speed for a particular temperature.

Takeishi shows a control apparatus for a vibration wave motor. Three control devices are used. A phase difference determination means compensation element 1 is used to determine the direction of movement. A second compensation element 2 is used in a specific driving range lower than a fixed command point u_{max} and varies the amplitude of the drive signal. In this regime, the frequency of the drive signal is held at f_{max}, which is much higher than the resonant frequency and provides the lowest driving forces in its operating range (column 5, lines 31-35). Above u_{max}, the amplitude is held at a maximum and the frequency is lowered up to f_r, which is slightly higher than resonance. The drive force is increased with a decrease of the drive frequency in this operating regime. There is no suggestion in Takeishi of varying the duty cycle.

Yoshida shows a driving apparatus for driving an electromechanical conversion element. Yoshida shows that for a certain range of duty cycle for a square wave drive signal, forward movement is produced (column 8, lines 1-12). For another range, reverse movement is produced. Yoshida does not show or suggest controlling speed based on the duty cycle of the driving signal, but only controlling direction based on the duty cycle.

Sugaya shows a camera having an blur suppression mechanism.

In contrast to the cited references, claim 19 includes:

> a position servo controller which sets a basic driving frequency of the drive signal and controls said non-frequency parameter of the drive signal based on a difference between the present position and the control target position so that the movable member pursues the control target position.

Neither Senda nor the other cited references show a controller that sets a basic driving frequency of the drive signal and then controls a non-frequency parameter based on the difference between a target position and the control position. Therefore, claim 19 is patentably distinct from the cited references. Claims 20-27 are dependent upon claim 19 and thus include every limitation of claim 19. Therefore, claims 20-27 are also patentably distinct from the cited references.

Also in contrast to the cited references, claim 28 includes:

> a position servo controller which sets a frequency of the drive signal to a frequency lower than a complete resonant frequency of the ultrasonic actuator, and which controls a first non-frequency parameter of the drive signal based on a difference between the present position and the control target position so that the movable member pursues the control target position.

Neither Senda nor the other cited references show a controller that sets a frequency of the drive signal lower than a complete resonant frequency and then controls a non-frequency parameter based on the difference between a target position and the control position. Therefore, claim 28 is patentably distinct from the cited references. Claims 29-33 are dependent upon claim 28 and thus include every limitation of claim 28. Therefore, claims 29-33 are also patentably distinct from the cited references.

Also in contrast to the cited references, claim 34 includes:

> a position servo controller which sets a basic driving frequency of the drive signal and controls said non-frequency parameter of the drive

> signal based on a difference between the present position and the control target position so that the movable member pursues the control target position, wherein a frequency of the drive signal is maintained within a predetermined frequency range.

As stated above with regard to claim 19, neither Senda nor the other cited references show a controller that sets a basic driving frequency of the drive signal and then controls a non-frequency parameter based on the difference between a target position and the control position. Therefore, claim 34 is patentably distinct from the cited references. Claims 35-37 are dependent upon claim 34 and thus include every limitation of claim 34. Therefore, claims 35-37 are also patentably distinct from the cited references.

Also in contrast to the cited references, claim 38 includes:

> a position servo controller which sets a basic driving frequency of the drive signal and controls a non-frequency parameter of the drive signal based on a difference between the present position and the control target position so that the movable member pursues the control target position.

As stated above with regard to claim 19, neither Senda nor the other cited references show a controller that sets a basic driving frequency of the drive signal and then controls a non-frequency parameter based on the difference between a target position and the control position. Therefore, claim 38 is patentably distinct from the cited references. Claims 39-41 are dependent upon claim 38 and thus include every limitation of claim 38. Therefore, claims 39-41 are also patentably distinct from the cited references.

Also in contrast to the cited references, claim 42 includes:

> a position servo controller which sets a basic driving frequency of the drive signal and controls a non-frequency parameter of the drive signal based on a difference between the present position and the control target position so that the movable member pursues the control target position.

As stated above, neither Senda nor the other cited references show a controller that sets a basic driving frequency of the drive signal and then controls a non-frequency

parameter based on the difference between a target position and the control position. Therefore, claim 42 is patentably distinct from the cited references. Claim 43 is dependent upon claim 42 and thus includes every limitation of claim 42. Therefore, claim 42 is also patentably distinct from the cited references.

CONCLUSION

Wherefore, in view of the foregoing amendments and remarks, this application is considered to be in condition for allowance, and an early reconsideration and a Notice of Allowance are earnestly solicited.

This Amendment increases the number of independent claims by 2 from 3 to 5 and increases the total number of claims by 7 from 18 to 25 (20 claims previously paid for), but does not present any multiple dependency claims. Accordingly, a Response Transmittal and Fee Authorization form authorizing the amount of $262.00 to be charged to Sidley Austin Brown & Wood LLP's Deposit Account No. 18-1260 is enclosed herewith in duplicate. However, if the Response Transmittal and Fee Authorization form is missing, insufficient, or otherwise inadequate, or if a fee, other than the issue fee, is required during the pendency of this application, please charge such fee to Sidley Austin Brown & Wood LLP's Deposit Account No. 18-1260.

Any fee required by this document other than the issue fee, and not submitted herewith should be charged to Sidley Austin Brown & Wood LLP's Deposit Account No. 18-1260. Any refund should be credited to the same account.

If an extension of time is required to enable this document to be timely filed and there is no separate Petition for Extension of Time filed herewith, this document is to be construed as also constituting a Petition for Extension of Time Under 37 C.F.R. § 1.136(a) for a period of time sufficient to enable this document to be timely filed.

Any other fee required for such Petition for Extension of Time and any other fee required by this document pursuant to 37 C.F.R. §§ 1.16 and 1.17, other than the issue fee, and not submitted herewith should be charged to Sidley Austin Brown & Wood LLP's Deposit Account No. 18-1260. Any refund should be credited to the same account.

Respectfully submitted,

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